

Message Text

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ACTION EUR-12

INFO OCT-01 ISO-00 CIAE-00 PM-03 INR-05 L-02 ACDA-05

NSAE-00 PA-01 RSC-01 PRS-01 SP-02 USIA-06 TRSE-00

SAJ-01 DODE-00 /040 W

----- 059592

R 211505Z NOV 74

FM USMISSION NATO

TO USCINCEUR

INFO CINCUSAFE

SECSTATE WASHDC 8909

C O N F I D E N T I A L USNATO 6465

E.O. 11652: XGDS1

TAGS: MARR, NATO

SUBJECT: US THIRD GENERATION AIRCRAFT SHELTER SYSTEM DESIGN

CINCEUR FOR ECJ4/7.

USAFE FOR DEPP.

FOR YOUR INFORMATION, THE TEXT OF THE NATO INTERNATIONAL
STAFF MEMORANDUM ON THE SUBJECT IS QUOTED HEREWITH.

QUOTE. 15TH NOVEMBER INFRA/AIR/74/208

TO : THE DELEGATION OF THE UNITED STATES TO NATO FOR
THE ATTENTION OF THE DIRECTOR, INFRASTRUCTURE AND LOGISTICS
DIVISION

COPY : SHAPE, LANDA DIVISION, AIR & NAVAL BRANCH

COPY: MR. GURVIN, WRG SECTION, NATO

FROM: HEAD, AIRFIELDS SECTION

SUBJECT: REQUEST FOR SHAPE/NIS APPROVAL OF THE US THIRD
GENERATION AIRCRAFT SHELTER SYSTEM CONCEPTUAL DESIGN

REF: LETTER DATED 15 OCT. 1974 WITHOUT REFERENCE NUMBER FROM
HQ USAFE.

1. I AM OF THE OPINION THAT THE PROPOSED DESIGN FOR SUBJECT
SHELTER IS NOT THE BEST DESIGN. INSTEAD OF THIS CONCEPT WITH 45'
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RADIUS IN THE CENTRE AND 24' RADIUS AT THE SIDES, A CIRCULAR
ARCH WITH 45' RADIUS GIVES THE FOLLOWING ADVANTAGES OVER THE
PROPOSED ONE:

A. IT GIVES A BETTER CAPACITY TO TAKE THE STATIC LOAD,

I.E. THE ARCH IS UNDER COMPRESSION ONLY AND THUS NO STRUC-TURAL REINFORCEMENT STEEL IS REQUIRED TO TAKE CARE OF NEGATIVE BENDING MOMENTS IN THE ARCH.

B. IT HAS A LESSER CROSS SECTIONAL AREA (133 M(2) OR 1437 SQ FT) THAN THE US PROPOSED DESIGN WHICH HAS A CROSS SECTIONAL AREA OF 143 M(2) OR 1544 SQ FT. THIS ONE HUNDRED SQUARE FEET SMALLER DOOR OPENING PROVIDES AN INCREASED SURVIVAL RATIO.

C. THE 2 1/2 FT LESSER HEIGHT (24.94' INSTEAD OF 27.45') GIVES A REDUCTION IN THE COST OF THE CLOSURE.

D. AT WING TIP HEIGHT OF THE F111 AIRCRAFT IT GIVES DOUBLE THE WING TIP CLEARANCE OF THE PROPOSAL DESIGN I.E. 2 X3 FT INSTEAD OF 2 X 1.5 FT SO THAT THE F111 WINGS CAN BE NEARLY FULLY SWEP FORWARD.

E. INSTEAD OF A VERTICAL START (90 DEG) OF THE ARCH AT GROUND LEVEL IN THE US PROPOSAL, THE CIURCULAR ARCH STARTS AT AN ANGLE OF 63.5 DEG WHICH IS FAVOURABLE TO CONE WITH THE DEFINED THREAT (BLAST).

2. THE CIRCUMFERENCE OF THE ARCH IS THE SAME IN BOTH DESIGNS I.E. 99.8' OR 30.4 M. THEREFORE, THERE SHOULD BE NO IMPORTANT DIFFERENCE IN COST. THE DOOR OF THE CIRCULAR ARCH WITH A CONTINUOUS RADIUS OF 45 FEET, HOWEVER, SHOULD BE CHEAPER, SINCE 2.5 FT LOWER. THE FLOOR OF THE LATTER IS 5 FOOT WIDER AT EACH SIDE, BUT THAT ADDITIONAL AREA COULD BE PAVED WITH VERY LIGHT AND CHEAP PAVEMENT.

3. MY CONCLUSION IS THAT THE PROPOSED DESIGN SHOULD BE IMPROVED TO SHOW ONE RADIUS OF 45 FEET WITH A TOP HEIGHT OF 24.94 FT AND A GROUND WIDTH OF 2 X 40.25 FT EQUALS 80.563 FT HAVING AN ARCH ANGLE OF 2 X 63.52689 DEGREES.

4. YOUR COMMENTS ON THE FOREGOING CONCLUSION ARE INVITED, PREFERABLE BASED ON MORE PROFOUND CALCULATIONS FOR WHICH I HAVE NOT SUFFICIENT TIME AVAILABLE.

5. I PREFER TO DELAY MY COMMENTS ON THE CLOSURE TILL THE CONFIDENTIAL

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MOMENT WHEN THE 7.S. WEAPON LABORATORY HAS FINISHED ITS STUDY OF THE TYPE OF CLOSURE WHICH I HAVE SUBMITTED TO THEIR REPRESENTATIVES AT A MEETING IN RUISLIP ON 25TH OCTOBER, 1974. SIGNED: G. RUYGROK
END QUOTE.
MCAULIFFE

CONFIDENTIAL

<< END OF DOCUMENT >>

Message Attributes

Automatic Decaptioning: X
Capture Date: 11 JUN 1999
Channel Indicators: n/a
Current Classification: UNCLASSIFIED
Concepts: n/a
Control Number: n/a
Copy: SINGLE
Draft Date: 21 NOV 1974
Decaption Date: 01 JAN 1960
Decaption Note:
Disposition Action: RELEASED
Disposition Approved on Date:
Disposition Authority: garlanwa
Disposition Case Number: n/a
Disposition Comment: 25 YEAR REVIEW
Disposition Date: 28 MAY 2004
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
Document Number: 1974ATO06465
Document Source: ADS
Document Unique ID: 00
Drafter: n/a
Enclosure: n/a
Executive Order: 11652 XGDS1
Errors: n/a
Film Number: n/a
From: NATO
Handling Restrictions: n/a
Image Path:
ISecure: 1
Legacy Key: link1974/newtext/t19741185/abbryypp.tel
Line Count: 103
Locator: TEXT ON-LINE
Office: n/a
Original Classification: CONFIDENTIAL
Original Handling Restrictions: n/a
Original Previous Classification: n/a
Original Previous Handling Restrictions: n/a
Page Count: 2
Previous Channel Indicators:
Previous Classification: CONFIDENTIAL
Previous Handling Restrictions: n/a
Reference: LETTER DATED 15 OCT. 1974 WITHOUT REFERENCE NUMBER FROM HQ USAFE.
Review Action: RELEASED, APPROVED
Review Authority: garlanwa
Review Comment: n/a
Review Content Flags:
Review Date: 10 APR 2002
Review Event:
Review Exemptions: n/a
Review History: RELEASED <10 APR 2002 by martinml>; APPROVED <29-Oct-2002 by garlanwa>
Review Markings:

Declassified/Released
US Department of State
EO Systematic Review
30 JUN 2005

Review Media Identifier:
Review Referrals: n/a
Review Release Date: n/a
Review Release Event: n/a
Review Transfer Date:
Review Withdrawn Fields: n/a
Secure: OPEN
Status: NATIVE
Subject: US THIRD GENERATION AIRCRAFT SHELTER SYSTEM DESIGN
TAGS: MARR, NATO
To: USCINCEUR INFO CINCUSAFE
STATE
Type: TE
Markings: Declassified/Released US Department of State EO Systematic Review 30 JUN 2005